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June 1, 2012

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SUPERFUND DIVISION

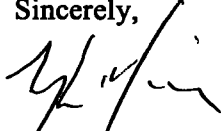
Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
901 North 5th Street
Kansas City, KS 66101

Re: The Doe Run Company - Leadwood Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 50 of the Unilateral Administrative Order (Docket No. CERCLA-07-2006-0272) for the referenced project and on behalf of The Doe Run Company, the progress report for the period April 1, 2012 through April 30, 2012 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0800.

Sincerely,



Ty L. Morris, P.E., R.G.
Vice President

TLM/jms
Enclosures

c: Mark Nations – TDRC
Matt Wohl – TDRC (electronic only)
Kathy Rangen – MDNR
Tim Skoglund – Barr Engineering



Leadwood Mine Tailings Site
Leadwood, Missouri
Removal Action - Monthly Progress Report
Period: April 1, 2012 – April 30, 2012

1. Actions Performed or Completed This Period:

- a. No activities were completed at the site during the period.

2. Data and Results Received This Period:

- a. During this period, water samples were collected from downstream of Leadwood Dam and the East Seep and Erosion Area, as well as from upstream and downstream of the confluence of Eaton Creek with Big River. The analytical results for this event are included with this progress report.
- b. During this period, the Ambient Air Monitoring Report for January 2012 was received. Any issues identified in these reports are discussed below. A copy of this document has been sent to your attention.

The fourth quarter 2011 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No samples were taken with the TSP monitors on 10/20/11 due to training.
- No samples were taken with the TSP and PM₁₀ monitors on 11/14/11 due to training.
- No samples were taken with the TSP and PM₁₀ monitors on 11/23/11, 11/24/11, 11/25/11, and 11/26/11 due to the holiday.
- There was a QA blank filter associated with the Leadwood #2 (Office) TSP monitors and PM₁₀ on 11/28/11.
- No samples were taken with the Leadwood #2 (Office) TSP monitor on 12/15/11 due to mechanical failure. Upon discovery, the issue was corrected.
- No samples were taken with the Big River #4 QA TSP monitor on 12/20/11 due to mechanical failure. Upon discovery, the issue was corrected.
- No samples were taken with the Leadwood #3 (School) TSP monitor on 12/21/11 due to mechanical failure. Upon discovery, the issue was corrected.
- No samples were taken with the TSP and PM₁₀ monitors on 12/22/11, 12/23/11, 12/26/11, 12/29/11, and 12/30/11 due to the holiday.

3. Scheduled Activities not Completed This Period:

- a. None.

4. Planned Activities for Next Period:

- a. Continue vegetation maintenance activities. The use of biosolids will only be continued if a biosolids management plan has been submitted to and approved by EPA.
- b. It is anticipated that EPA will use this site as a soil repository in the future. Preparations for these activities will continue.
- c. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- d. Complete air monitoring activities as described in the Removal Action Work Plan.

5. Changes in Personnel:

- a. None.

6. Issues or Problems Arising This Period:

- a. None.

7. Resolution of Issues or Problems Arising This Period:

- a. None.

End of Monthly Progress Report

May 01, 2012

Allison Olds
Barr Engineering Company
1001 Diamond Ridge
Suite 1100
Jefferson City, MO 65109
TEL: (573) 638-5007
FAX: (573) 638-5001



RE: Leadwood MTS-25/86-0013

WorkOrder: 12041029

Dear Allison Olds:

TEKLAB, INC received 5 samples on 4/24/2012 11:00:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Elizabeth A. Hurley
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

This reporting package includes the following:

| | |
|-------------------------|----------|
| Cover Letter | 1 |
| Report Contents | 2 |
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| Chain of Custody | Appended |

Client: Barr Engineering Company**Work Order:** 12041029**Client Project:** Leadwood MTS-25/86-0013**Report Date:** 01-May-12**Abbr Definition**

- CCV** Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF** Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI** Did not ignite
- DUP** Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV** Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH** IL Dept. of Public Health
- LCS** Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCS D** Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MB** Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL** Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS** Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD** Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW** Molecular weight
- ND** Not Detected at the Reporting Limit
- NELAP** NELAP Accredited
- PQL** Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL** The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD** Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK** The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr** Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC** Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|--|---|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| E - Value above quantitation range | H - Holding times exceeded |
| M - Manual Integration used to determine area response | ND - Not Detected at the Reporting Limit |
| R - RPD outside accepted recovery limits | S - Spike Recovery outside recovery limits |
| X - Value exceeds Maximum Contaminant Level | |



Case Narrative

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

Cooler Receipt Temp: 5.2 °C

Locations and Accreditations

| Collinsville | | Springfield | | Kansas City | |
|--------------|---|-------------|---|-------------|--------------------------------------|
| Address | 5445 Horseshoe Lake Road Collinsville, IL 62234-7425 | Address | 3920 Pintail Dr Springfield, IL 62711-9415 | Address | 8421 Nieman Road Lenexa, KS 66214 |
| Phone | (618) 344-1004 | Phone | (217) 698-1004 | Phone | (913) 541-1998 |
| Fax | (618) 344-1005 | Fax | (217) 698-1005 | Fax | (913) 541-1998 |
| Email | jhriley@teklabinc.com | Email | kmccclain@teklabinc.com | Email | dthompson@teklabinc.com |

| State | Dept | Cert # | NELAP | Exp Date | Lab |
|-----------|------|---------|-------|-----------|--------------|
| Illinois | IEPA | 100226 | NELAP | 1/31/2013 | Collinsville |
| Kansas | KDHE | E-10374 | NELAP | 1/31/2013 | Collinsville |
| Louisiana | LDEQ | 166493 | NELAP | 6/30/2012 | Collinsville |
| Louisiana | LDEQ | 166578 | NELAP | 6/30/2012 | Springfield |
| Arkansas | ADEQ | 88-0966 | | 3/14/2013 | Collinsville |
| Illinois | IDPH | 17584 | | 4/30/2013 | Collinsville |
| Kentucky | UST | 0073 | | 5/26/2014 | Collinsville |
| Missouri | MDNR | 00930 | | 4/13/2013 | Collinsville |
| Oklahoma | ODEQ | 9978 | | 8/31/2012 | Collinsville |



Laboratory Results

<http://www.teklabinc.com/>

Client: Barr Engineering Company
Client Project: Leadwood MTS-25/86-0013
Lab ID: 12041029-001
Matrix: AQUEOUS

Work Order: 12041029

Report Date: 01-May-12

Client Sample ID: LW-001

Collection Date: 04/23/2012 9:45

| Analyses | Certification | RL | Qual | Result | Units | DF | Date Analyzed | Batch |
|---|---------------|------|------|--------|-------|----|------------------|---------|
| EPA 600 375.2 REV 2.0 1993 (TOTAL) | | | | | | | | |
| Sulfate | NELAP | 100 | | 308 | mg/L | 10 | 04/26/2012 20:41 | R162909 |
| STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED | | | | | | | | |
| Lab pH | NELAP | 1.00 | | 8.02 | | 1 | 04/24/2012 12:42 | R162744 |
| STANDARD METHODS 18TH ED. 2340 C | | | | | | | | |
| Hardness, as (CaCO ₃) | NELAP | 5 | | 600 | mg/L | 1 | 04/24/2012 14:25 | R162803 |
| STANDARD METHODS 18TH ED. 2540 D | | | | | | | | |
| Total Suspended Solids | NELAP | 6 | | < 6 | mg/L | 1 | 04/25/2012 8:37 | R162831 |
| STANDARD METHODS 18TH ED. 2540 F | | | | | | | | |
| Solids, Settleable | NELAP | 0.1 | | < 0.1 | ml/L | 1 | 04/24/2012 12:33 | R162782 |
| STANDARD METHODS 18TH ED. 5310 C, ORGANIC CARBON | | | | | | | | |
| Total Organic Carbon (TOC) | NELAP | 1.0 | | 2.6 | mg/L | 1 | 04/26/2012 14:49 | R162912 |
| EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | 2.60 | µg/L | 1 | 04/24/2012 17:28 | 77495 |
| Zinc | NELAP | 10.0 | | 2480 | µg/L | 1 | 04/24/2012 17:28 | 77495 |
| EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | 2.90 | µg/L | 1 | 04/25/2012 11:43 | 77499 |
| Zinc | NELAP | 10.0 | | 2880 | µg/L | 1 | 04/25/2012 11:43 | 77499 |
| STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED) | | | | | | | | |
| Lead | NELAP | 2.00 | | 4.36 | µg/L | 1 | 04/25/2012 16:53 | 77498 |
| STANDARD METHODS 18TH ED. 3030 E, 3113 B, METALS BY GFAA | | | | | | | | |
| Lead | NELAP | 2.00 | X | 9.20 | µg/L | 1 | 04/27/2012 10:03 | 77502 |



Laboratory Results

<http://www.teklabinc.com/>

Client: Barr Engineering Company
Client Project: Leadwood MTS-25/86-0013
Lab ID: 12041029-002
Matrix: AQUEOUS

Work Order: 12041029
Report Date: 01-May-12

Client Sample ID: LW-002

Collection Date: 04/23/2012 9:15

| Analyses | Certification | RL | Qual | Result | Units | DF | Date Analyzed | Batch |
|---|---------------|------|------|--------|-------|----|------------------|---------|
| EPA 600 375.2 REV 2.0 1993 (TOTAL) | | | | | | | | |
| Sulfate | NELAP | 200 | | 468 | mg/L | 20 | 04/26/2012 20:55 | R162909 |
| STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED | | | | | | | | |
| Lab pH | NELAP | 1.00 | | 7.71 | | 1 | 04/24/2012 12:42 | R162744 |
| STANDARD METHODS 18TH ED. 2340 C | | | | | | | | |
| Hardness, as (CaCO ₃) | NELAP | 5 | | 700 | mg/L | 1 | 04/24/2012 14:25 | R162803 |
| STANDARD METHODS 18TH ED. 2540 D | | | | | | | | |
| Total Suspended Solids | NELAP | 6 | | < 6 | mg/L | 1 | 04/25/2012 8:37 | R162831 |
| STANDARD METHODS 18TH ED. 2540 F | | | | | | | | |
| Solids, Settleable | NELAP | 0.1 | | < 0.1 | ml/L | 1 | 04/24/2012 12:33 | R162782 |
| STANDARD METHODS 18TH ED. 5310 C, ORGANIC CARBON | | | | | | | | |
| Total Organic Carbon (TOC) | NELAP | 1.0 | | 2.5 | mg/L | 1 | 04/26/2012 14:56 | R162912 |
| EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/24/2012 17:46 | 77495 |
| Zinc | NELAP | 10.0 | | 3300 | µg/L | 1 | 04/24/2012 17:46 | 77495 |
| EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | 3.10 | µg/L | 1 | 04/25/2012 11:48 | 77499 |
| Zinc | NELAP | 10.0 | | 3720 | µg/L | 1 | 04/25/2012 11:48 | 77499 |
| STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED) | | | | | | | | |
| Lead | NELAP | 2.00 | X | 8.31 | µg/L | 1 | 04/25/2012 16:56 | 77498 |
| STANDARD METHODS 18TH ED. 3030 E, 3113 B, METALS BY GFAA | | | | | | | | |
| Lead | NELAP | 2.00 | X | 14.5 | µg/L | 1 | 04/27/2012 10:21 | 77502 |



Laboratory Results

<http://www.teklabinc.com/>

Client: Barr Engineering Company
Client Project: Leadwood MTS-25/86-0013
Lab ID: 12041029-003
Matrix: AQUEOUS

Work Order: 12041029
Report Date: 01-May-12
Client Sample ID: LW-Dup
Collection Date: 04/23/2012 8:45

| Analyses | Certification | RL | Qual | Result | Units | DF | Date Analyzed | Batch |
|---|---------------|------|------|--------|-------|----|------------------|---------|
| EPA 600 375.2 REV 2.0 1993 (TOTAL) | | | | | | | | |
| Sulfate | NELAP | 10 | | 21 | mg/L | 1 | 04/30/2012 19:13 | R163045 |
| STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED | | | | | | | | |
| Lab pH | NELAP | 1.00 | | 7.94 | | 1 | 04/24/2012 12:42 | R162744 |
| STANDARD METHODS 18TH ED. 2340 C | | | | | | | | |
| Hardness, as (CaCO ₃) | NELAP | 5 | | 240 | mg/L | 1 | 04/24/2012 14:25 | R162803 |
| STANDARD METHODS 18TH ED. 2540 D | | | | | | | | |
| Total Suspended Solids | NELAP | 6 | | 9 | mg/L | 1 | 04/25/2012 8:37 | R162831 |
| STANDARD METHODS 18TH ED. 5310 C, ORGANIC CARBON | | | | | | | | |
| Total Organic Carbon (TOC) | NELAP | 1.0 | | 1.8 | mg/L | 1 | 04/26/2012 15:02 | R162912 |
| EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/24/2012 17:51 | 77495 |
| Zinc | NELAP | 10.0 | | < 10.0 | µg/L | 1 | 04/24/2012 17:51 | 77495 |
| EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/25/2012 11:54 | 77499 |
| Zinc | NELAP | 10.0 | | < 10.0 | µg/L | 1 | 04/25/2012 11:54 | 77499 |
| STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED) | | | | | | | | |
| Lead | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/25/2012 17:06 | 77498 |
| STANDARD METHODS 18TH ED. 3030 E, 3113 B, METALS BY GFAA | | | | | | | | |
| Lead | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/27/2012 10:25 | 77502 |



Laboratory Results

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

Lab ID: 12041029-004

Client Sample ID: LW-DS

Matrix: AQUEOUS

Collection Date: 04/23/2012 8:55

| Analyses | Certification | RL | Qual | Result | Units | DF | Date Analyzed | Batch |
|---|---------------|------|------|--------|-------|----|------------------|---------|
| EPA 600 375.2 REV 2.0 1993 (TOTAL) | | | | | | | | |
| Sulfate | NELAP | 10 | | 29 | mg/L | 1 | 04/26/2012 21:03 | R162909 |
| STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED | | | | | | | | |
| Lab pH | NELAP | 1.00 | | 7.88 | | 1 | 04/24/2012 12:42 | R162744 |
| STANDARD METHODS 18TH ED. 2340 C | | | | | | | | |
| Hardness, as (CaCO ₃) | NELAP | 5 | | 240 | mg/L | 1 | 04/24/2012 14:25 | R162803 |
| STANDARD METHODS 18TH ED. 2540 D | | | | | | | | |
| Total Suspended Solids | NELAP | 6 | | < 6 | mg/L | 1 | 04/25/2012 8:37 | R162831 |
| STANDARD METHODS 18TH ED. 5310 C, ORGANIC CARBON | | | | | | | | |
| Total Organic Carbon (TOC) | NELAP | 1.0 | | 1.8 | mg/L | 1 | 04/26/2012 15:09 | R162912 |
| EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/24/2012 17:57 | 77495 |
| Zinc | NELAP | 10.0 | | 20.5 | µg/L | 1 | 04/24/2012 17:57 | 77495 |
| EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/25/2012 12:10 | 77499 |
| Zinc | NELAP | 10.0 | | 23.6 | µg/L | 1 | 04/25/2012 12:10 | 77499 |
| STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED) | | | | | | | | |
| Lead | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/25/2012 17:10 | 77498 |
| STANDARD METHODS 18TH ED. 3030 E, 3113 B, METALS BY GFAA | | | | | | | | |
| Lead | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/27/2012 10:28 | 77502 |



Laboratory Results

<http://www.teklabinc.com/>

Client: Barr Engineering Company
Client Project: Leadwood MTS-25/86-0013
Lab ID: 12041029-005
Matrix: AQUEOUS

Work Order: 12041029
Report Date: 01-May-12

Client Sample ID: LW-US

Collection Date: 04/23/2012 8:35

| Analyses | Certification | RL | Qual | Result | Units | DF | Date Analyzed | Batch |
|---|---------------|------|------|--------|-------|----|------------------|---------|
| EPA 600 375.2 REV 2.0 1993 (TOTAL) | | | | | | | | |
| Sulfate | NELAP | 10 | | 21 | mg/L | 1 | 04/26/2012 21:05 | R162909 |
| STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED | | | | | | | | |
| Lab pH | NELAP | 1.00 | | 7.91 | | 1 | 04/24/2012 12:42 | R162744 |
| STANDARD METHODS 18TH ED. 2340 C | | | | | | | | |
| Hardness, as (CaCO ₃) | NELAP | 5 | | 280 | mg/L | 1 | 04/24/2012 14:25 | R162803 |
| STANDARD METHODS 18TH ED. 2540 D | | | | | | | | |
| Total Suspended Solids | NELAP | 6 | R | 6 | mg/L | 1 | 04/25/2012 8:46 | R162831 |
| % RPD was outside the QC limits due to low level results. When duplicate results for TSS are 20 mg/L or less and have a difference of no greater than the PQL, the results are considered within the precision of the test method and are reportable. | | | | | | | | |
| STANDARD METHODS 18TH ED. 5310 C, ORGANIC CARBON | | | | | | | | |
| Total Organic Carbon (TOC) | NELAP | 1.0 | | 1.6 | mg/L | 1 | 04/26/2012 15:15 | R162912 |
| EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/24/2012 18:21 | 77495 |
| Zinc | NELAP | 10.0 | | < 10.0 | µg/L | 1 | 04/24/2012 18:21 | 77495 |
| EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL) | | | | | | | | |
| Cadmium | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/25/2012 12:15 | 77499 |
| Zinc | NELAP | 10.0 | | < 10.0 | µg/L | 1 | 04/25/2012 12:15 | 77499 |
| STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED) | | | | | | | | |
| Lead | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/25/2012 17:20 | 77498 |
| STANDARD METHODS 18TH ED. 3030 E, 3113 B, METALS BY GFAA | | | | | | | | |
| Lead | NELAP | 2.00 | | < 2.00 | µg/L | 1 | 04/27/2012 10:31 | 77502 |



Sample Summary

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

| Lab Sample ID | Client Sample ID | Matrix | Fractions | Collection Date |
|---------------|------------------|---------|-----------|-----------------|
| 12041029-001 | LW-001 | Aqueous | 5 | 04/23/2012 9:45 |
| 12041029-002 | LW-002 | Aqueous | 5 | 04/23/2012 9:15 |
| 12041029-003 | LW-Dup | Aqueous | 5 | 04/23/2012 8:45 |
| 12041029-004 | LW-DS | Aqueous | 5 | 04/23/2012 8:55 |
| 12041029-005 | LW-US | Aqueous | 5 | 04/23/2012 8:35 |



Dates Report

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

| Sample ID | Client Sample ID Test Name | Collection Date | Received Date Prep Date/Time | Analysis Date/Time |
|---------------|--|-----------------|---|---|
| 12041029-001A | LW-001 Standard Methods 18th Ed. 2540 F | 04/23/2012 9:45 | 4/24/2012 11:00:00 AM | 04/24/2012 12:33 |
| 12041029-001B | LW-001 EPA 600 375.2 Rev 2.0 1993 (Total) Standard Method 18th Ed. 4500-H B, Laboratory Analyzed Standard Methods 18th Ed. 2340 C Standard Methods 18th Ed. 2540 D | 04/23/2012 9:45 | 4/24/2012 11:00:00 AM | 04/26/2012 20:41 04/24/2012 12:42 04/24/2012 14:25 04/25/2012 8:37 |
| 12041029-001C | LW-001 EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 18th Ed. 3030 E, 3113 B, Metals by GFAA | 04/23/2012 9:45 | 4/24/2012 11:00:00 AM 04/24/2012 14:17 04/24/2012 15:41 | 04/25/2012 11:43 04/27/2012 10:03 |
| 12041029-001D | LW-001 EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 18th Ed. 3030 B, 3113 B, Metals by GFAA (Dissolved) | 04/23/2012 9:45 | 4/24/2012 11:00:00 AM 04/24/2012 13:35 04/24/2012 14:06 | 04/24/2012 17:28 04/25/2012 16:53 |
| 12041029-001E | LW-001 Standard Methods 18th Ed. 5310 C, Organic Carbon | 04/23/2012 9:45 | 4/24/2012 11:00:00 AM | 04/26/2012 14:49 |
| 12041029-002A | LW-002 Standard Methods 18th Ed. 2540 F | 04/23/2012 9:15 | 4/24/2012 11:00:00 AM | 04/24/2012 12:33 |
| 12041029-002B | LW-002 EPA 600 375.2 Rev 2.0 1993 (Total) Standard Method 18th Ed. 4500-H B, Laboratory Analyzed Standard Methods 18th Ed. 2340 C Standard Methods 18th Ed. 2540 D | 04/23/2012 9:15 | 4/24/2012 11:00:00 AM | 04/26/2012 20:55 04/24/2012 12:42 04/24/2012 14:25 04/25/2012 8:37 |
| 12041029-002C | LW-002 EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 18th Ed. 3030 E, 3113 B, Metals by GFAA | 04/23/2012 9:15 | 4/24/2012 11:00:00 AM 04/24/2012 14:17 04/24/2012 15:41 | 04/25/2012 11:48 04/27/2012 10:21 |
| 12041029-002D | LW-002 EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 18th Ed. 3030 B, 3113 B, Metals by GFAA (Dissolved) | 04/23/2012 9:15 | 4/24/2012 11:00:00 AM 04/24/2012 13:35 04/24/2012 14:06 | 04/24/2012 17:46 04/25/2012 16:56 |
| 12041029-002E | LW-002 Standard Methods 18th Ed. 5310 C, Organic Carbon | 04/23/2012 9:15 | 4/24/2012 11:00:00 AM | 04/26/2012 14:56 |
| 12041029-003A | LW-Dup Standard Method 18th Ed. 4500-H B, Laboratory Analyzed Standard Methods 18th Ed. 2340 C Standard Methods 18th Ed. 2540 D | 04/23/2012 8:45 | 4/24/2012 11:00:00 AM | 04/24/2012 12:42 04/24/2012 14:25 04/25/2012 8:37 |
| 12041029-003B | LW-Dup EPA 600 375.2 Rev 2.0 1993 (Total) | 04/23/2012 8:45 | 4/24/2012 11:00:00 AM | 04/30/2012 19:13 |



Dates Report

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

| Sample ID | Client Sample ID Test Name | Collection Date | Received Date Prep Date/Time | Analysis Date/Time |
|---------------|---|-----------------|---|---|
| 12041029-003C | LW-Dup EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 18th Ed. 3030 E, 3113 B, Metals by GFAA | 04/23/2012 8:45 | 4/24/2012 11:00:00 AM 04/24/2012 14:17 04/24/2012 15:41 | 04/25/2012 11:54 04/27/2012 10:25 |
| 12041029-003D | LW-Dup EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 18th Ed. 3030 B, 3113 B, Metals by GFAA (Dissolved) | 04/23/2012 8:45 | 4/24/2012 11:00:00 AM 04/24/2012 13:35 04/24/2012 14:06 | 04/24/2012 17:51 04/25/2012 17:06 |
| 12041029-003E | LW-Dup Standard Methods 18th Ed. 5310 C, Organic Carbon | 04/23/2012 8:45 | 4/24/2012 11:00:00 AM | 04/26/2012 15:02 |
| 12041029-004A | LW-DS Standard Method 18th Ed. 4500-H B, Laboratory Analyzed Standard Methods 18th Ed. 2340 C Standard Methods 18th Ed. 2540 D | 04/23/2012 8:55 | 4/24/2012 11:00:00 AM | 04/24/2012 12:42 04/24/2012 14:25 04/25/2012 8:37 |
| 12041029-004B | LW-DS EPA 600 375.2 Rev 2.0 1993 (Total) | 04/23/2012 8:55 | 4/24/2012 11:00:00 AM | 04/26/2012 21:03 |
| 12041029-004C | LW-DS EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 18th Ed. 3030 E, 3113 B, Metals by GFAA | 04/23/2012 8:55 | 4/24/2012 11:00:00 AM 04/24/2012 14:17 04/24/2012 15:41 | 04/25/2012 12:10 04/27/2012 10:28 |
| 12041029-004D | LW-DS EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 18th Ed. 3030 B, 3113 B, Metals by GFAA (Dissolved) | 04/23/2012 8:55 | 4/24/2012 11:00:00 AM 04/24/2012 13:35 04/24/2012 14:06 | 04/24/2012 17:57 04/25/2012 17:10 |
| 12041029-004E | LW-DS Standard Methods 18th Ed. 5310 C, Organic Carbon | 04/23/2012 8:55 | 4/24/2012 11:00:00 AM | 04/26/2012 15:09 |
| 12041029-005A | LW-US Standard Method 18th Ed. 4500-H B, Laboratory Analyzed Standard Methods 18th Ed. 2340 C Standard Methods 18th Ed. 2540 D | 04/23/2012 8:35 | 4/24/2012 11:00:00 AM | 04/24/2012 12:42 04/24/2012 14:25 04/25/2012 8:46 |
| 12041029-005B | LW-US EPA 600 375.2 Rev 2.0 1993 (Total) | 04/23/2012 8:35 | 4/24/2012 11:00:00 AM | 04/26/2012 21:05 |
| 12041029-005C | LW-US EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 18th Ed. 3030 E, 3113 B, Metals by GFAA | 04/23/2012 8:35 | 4/24/2012 11:00:00 AM 04/24/2012 14:17 04/24/2012 15:41 | 04/25/2012 12:15 04/27/2012 10:31 |
| 12041029-005D | LW-US EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 18th Ed. 3030 B, 3113 B, Metals by GFAA (Dissolved) | 04/23/2012 8:35 | 4/24/2012 11:00:00 AM 04/24/2012 13:35 04/24/2012 14:06 | 04/24/2012 18:21 04/25/2012 17:20 |
| 12041029-005E | LW-US Standard Methods 18th Ed. 5310 C, Organic Carbon | 04/23/2012 8:35 | 4/24/2012 11:00:00 AM | 04/26/2012 15:15 |



Quality Control Results

<http://www.teklabinc.com/>

Client: Barr Engineering Company
Client Project: Leadwood MTS-25/86-0013

Work Order: 12041029
Report Date: 01-May-12

EPA 600 375.2 REV 2.0 1993 (TOTAL)

| | | | | | | | | | | | |
|------------------|----|----------------|--------|------------|-------------|------|-----------|------------|------------|--|------|
| Batch R162909 | | SampType: MBLK | | Units mg/L | | | | | | | |
| SampID: ICB/MBLK | | | | | | | | | | | Date |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed | | |
| Sulfate | 10 | | < 10 | | | | | | 04/26/2012 | | |

| | | | | | | | | | | |
|-----------------|--|---------------|------|------------|-------|-------------|-------|-----------|------------|---------------|
| Batch R162909 | | SampType: LCS | | Units mg/L | | | | | | |
| SampID: ICV/LCS | | | | | | | | | | Date Analyzed |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Sulfate | | 10 | | 22 | 20 | 0 | 109.6 | 90 | 110 | 04/26/2012 |

| | | | | | | | | | | | |
|------------------|----|----------------|--------|------------|-------------|------|-----------|------------|------------|--|------|
| Batch R163045 | | SampType: MBLK | | Units mg/L | | | | | | | |
| SampID: ICB/MBLK | | | | | | | | | | | Date |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed | | |
| Sulfate | 10 | | < 10 | | | | | | 04/30/2012 | | |

| | | | | | | | | | | |
|-----------------|--|---------------|------|------------|-------|-------------|-------|-----------|------------|---------------|
| Batch R163045 | | SampType: LCS | | Units mg/L | | | | | | |
| SampID: ICV/LCS | | | | | | | | | | Date Analyzed |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Sulfate | | 10 | | 22 | 20 | 0 | 108.3 | 90 | 110 | 04/30/2012 |
| | | | | | | | | | | |

STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED

| Batch R162744 | | SampType: LCS | | Units | | | | | | |
|---------------|--|---------------|------|--------|-------|-------------|------|-----------|------------|---------------|
| SampID: LCS | | | | | | | | | | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Lab pH | | 1.00 | | 6.99 | 7.00 | 0 | 99.9 | 99.1 | 100.8 | 04/24/2012 |

| | | | | | | | | | | |
|--------------------------|--|---------------|------|--------|-------|--------------|------|-------------|------|---------------|
| Batch R162744 | | SampType: DUP | | Units | | RPD Limit 10 | | | | |
| SampID: 12041029-001BDUP | | | | | | | | | | Date Analyzed |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | |
| Lab pH | | 1.00 | | 8.03 | | | | 8.020 | 0.12 | 04/24/2012 |

| | | | | | | | | | | | |
|--------------------------|--|---------------|------|--------|-------|-------------|------|--------------|------|---------------|--|
| Batch R162744 | | SampType: DUP | | Units | | | | RPD Limit 10 | | | |
| SampID: 12041029-002BDUP | | | | | | | | | | Date Analyzed | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | | |
| Lab pH | | 1.00 | | 7.70 | | | | 7.710 | 0.13 | 04/24/2012 | |

| Batch R162744 | | SampType: DUP | | Units | | | | | RPD Limit 10 | | |
|--------------------------|--|---------------|------|--------|-------|-------------|------|-------------|--------------|---------------|--|
| SampID: 12041029-003ADUP | | | | | | | | | | Date Analyzed | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | | |
| Lab pH | | 1.00 | | 7.92 | | | | 7.940 | 0.25 | 04/24/2012 | |

Client: Barr Engineering Company
 Client Project: Leadwood MTS-25/86-0013

Work Order: 12041029
 Report Date: 01-May-12

STANDARD METHOD 18TH ED. 4500-H B, LABORATORY ANALYZED

| Batch R162744 SampType: DUP | | Units | | RPD Limit 10 | | | | | | Date Analyzed |
|-----------------------------|------|-------|--------|--------------|-------------|------|-------------|------|--|---------------|
| SampID: 12041029-004ADUP | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | | |
| Lab pH | 1.00 | | 7.89 | | | | 7.880 | 0.13 | | 04/24/2012 |

| Batch R162744 SampType: DUP | | Units | | RPD Limit 10 | | | | | | Date Analyzed |
|-----------------------------|------|-------|--------|--------------|-------------|------|-------------|------|--|---------------|
| SampID: 12041029-005ADUP | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | | |
| Lab pH | 1.00 | | 7.92 | | | | 7.910 | 0.13 | | 04/24/2012 |

STANDARD METHODS 18TH ED. 2340 C

| Batch R162803 SampType: MBLK | | Units mg/L | | | | | | | | Date Analyzed |
|------------------------------------|----|------------|--------|-------|-------------|------|-----------|------------|--|---------------|
| SampID: MB-R162803 | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | |
| Hardness, as (CaCO ₃) | 5 | | < 5 | | | | | | | 04/24/2012 |

| Batch R162803 SampType: LCS | | Units mg/L | | | | | | | | Date Analyzed |
|------------------------------------|----|------------|--------|-------|-------------|-------|-----------|------------|--|---------------|
| SampID: LCS-R162803 | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | |
| Hardness, as (CaCO ₃) | 5 | | 1020 | 1000 | 0 | 102.0 | 90 | 110 | | 04/24/2012 |

| Batch R162803 SampType: MS | | Units mg/L | | | | | | | | Date Analyzed |
|------------------------------------|----|------------|--------|-------|-------------|------|-----------|------------|--|---------------|
| SampID: 12041029-004AMS | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | |
| Hardness, as (CaCO ₃) | 5 | | 620 | 400 | 240.0 | 95.0 | 85 | 115 | | 04/24/2012 |

| Batch R162803 SampType: MSD | | Units mg/L | | RPD Limit 10 | | | | | | Date Analyzed |
|------------------------------------|----|------------|--------|--------------|-------------|------|-------------|------|--|---------------|
| SampID: 12041029-004AMSD | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | | |
| Hardness, as (CaCO ₃) | 5 | | 640 | 400 | 240.0 | 100 | 620.0 | 3.17 | | 04/24/2012 |

STANDARD METHODS 18TH ED. 2540 D

| Batch R162831 SampType: MBLK | | Units mg/L | | | | | | | | Date Analyzed |
|------------------------------|----|------------|--------|-------|-------------|------|-----------|------------|--|---------------|
| SampID: MBLK | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | |
| Total Suspended Solids | 6 | | < 6 | | | | | | | 04/25/2012 |

| Batch R162831 SampType: LCS | | Units mg/L | | | | | | | | Date Analyzed |
|-----------------------------|----|------------|--------|-------|-------------|-------|-----------|------------|--|---------------|
| SampID: LCS | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | |
| Total Suspended Solids | 6 | | 106 | 100 | 0 | 106.0 | 85 | 115 | | 04/25/2012 |
| Total Suspended Solids | 6 | | 100 | 100 | 0 | 100 | 85 | 115 | | 04/25/2012 |
| Total Suspended Solids | 6 | | 108 | 100 | 0 | 108.0 | 85 | 115 | | 04/25/2012 |



Quality Control Results

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Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

STANDARD METHODS 18TH ED. 2540 D

| Batch R162831 | | SampType: DUP | | Units mg/L | | | | RPD Limit 15 | |
|-----------------------------|----|---------------|--------|------------|-------------|------|-------------|--------------|---------------|
| SampleID: 12041029-005a DUP | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
| Total Suspended Solids | 6 | R | 8 | | | | 6.000 | 28.57 | 04/25/2012 |

STANDARD METHODS 18TH ED. 5310 C, ORGANIC CARBON

| | | | | | | | | | | |
|----------------------------|--|----------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Batch R162912 | | SampType: MBLK | | Units mg/L | | | | | | |
| SampleID: ICB/MBLK | | | | | | | | | | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Total Organic Carbon (TOC) | | 1.0 | | < 1.0 | | | | | | 04/26/2012 |

| | | | | | | | | | | |
|----------------------------|-----|---------------|--------|------------|-------------|-------|-----------|------------|------------|------|
| Batch R162912 | | SampType: LCS | | Units mg/L | | | | | | |
| SampID: ICV/LCS | | | | | | | | | | Date |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed | |
| Total Organic Carbon (TOC) | 5.0 | | 50.4 | 48.2 | 0 | 104.5 | 89.6 | 109.5 | 04/26/2012 | |

| | | | | | | | | | | |
|----------------------------|-----|--------------|--------|------------|-------------|------|-----------|------------|------------|---------------|
| Batch R162912 | | SampType: MS | | Units mg/L | | | | | | |
| SampleID: 12041029-005EMS | | | | | | | | | | Date Analyzed |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | |
| Total Organic Carbon (TOC) | 1.0 | | 6.6 | 5.0 | 1.650 | 100 | 80 | 120 | 04/26/2012 | |

| Batch R162912 | | SampType: MSD | | Units mg/L | | | | RPD Limit 15 | | Date Analyzed |
|----------------------------|-----|---------------|--------|------------|-------------|-------|-------------|--------------|------------|---------------|
| SampID: 12041029-005EMSD | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | | |
| Total Organic Carbon (TOC) | 1.0 | | 6.7 | 5.0 | 1.650 | 101.2 | 6.650 | 0.90 | 04/26/2012 | |

EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)

| | | | | | | | | | | |
|--------------------|------|----------------|--------|------------|-------------|------|-----------|------------|------------|------|
| Batch 77495 | | SampType: MBLK | | Units µg/L | | | | | | |
| SampleID: MB-77495 | | | | | | | | | | Date |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed | |
| Cadmium | 2.00 | | < 2.00 | 2.00 | 0 | 0 | -100 | 100 | 04/24/2012 | |
| Zinc | 10.0 | | < 10.0 | 10.0 | 0 | 0 | -100 | 100 | 04/24/2012 | |

| Batch 77495 | | SampType: LCS | | Units µg/L | | | | | |
|---------------------|------|---------------|--------|------------|-------------|------|-----------|------------|---------------|
| SampleID: LCS-77495 | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Cadmium | 2.00 | | 45.0 | 50.0 | 0 | 90.0 | 85 | 115 | 04/24/2012 |
| Zinc | 10.0 | | 476 | 500 | 0 | 95.1 | 85 | 115 | 04/24/2012 |

| Batch 77495 | | SampType: MS | | Units µg/L | | | | | |
|---------------------------|------|--------------|--------|------------|-------------|------|-----------|------------|---------------|
| SampleID: 12041029-001DMS | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
| Cadmium | 2.00 | | 45.8 | 50.0 | 2.6 | 86.4 | 75 | 125 | 04/24/2012 |
| Zinc | 10.0 | | 2900 | 500 | 2485 | 82.4 | 75 | 125 | 04/24/2012 |

Client: Barr Engineering Company
 Client Project: Leadwood MTS-25/86-0013

Work Order: 12041029
 Report Date: 01-May-12

EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)

| Batch 77495 | | SampType: MSD | | Units µg/L | | RPD Limit 20 | | | | Date Analyzed |
|-------------|--|---------------|------|------------|-------|--------------|------|-------------|------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | |
| Cadmium | | 2.00 | | 45.4 | 50.0 | 2.6 | 85.6 | 45.8 | 0.88 | 04/24/2012 |
| Zinc | | 10.0 | | 2890 | 500 | 2485 | 81.6 | 2897 | 0.14 | 04/24/2012 |

EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)

| Batch 77499 | | SampType: MBLK | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|----------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | < 2.00 | 2.00 | 0 | 0 | -100 | 100 | 04/25/2012 |
| Zinc | | 10.0 | | < 10.0 | 10.0 | 0 | 22.0 | -100 | 100 | 04/25/2012 |

| Batch 77499 | | SampType: LCS | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|---------------|------|------------|-------|-------------|-------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | 49.0 | 50.0 | 0 | 98.0 | 85 | 115 | 04/25/2012 |
| Zinc | | 10.0 | | 511 | 500 | 0 | 102.1 | 85 | 115 | 04/25/2012 |

| Batch 77499 | | SampType: MS | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|--------------|------|------------|-------|-------------|-------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Cadmium | | 2.00 | | 47.7 | 50.0 | 0 | 95.4 | 75 | 125 | 04/25/2012 |
| Zinc | | 10.0 | | 514 | 500 | 0 | 102.7 | 75 | 125 | 04/25/2012 |

| Batch 77499 | | SampType: MSD | | Units µg/L | | RPD Limit 20 | | | | Date Analyzed |
|-------------|--|---------------|------|------------|-------|--------------|-------|-------------|------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | |
| Cadmium | | 2.00 | | 48.1 | 50.0 | 0 | 96.2 | 47.7 | 0.84 | 04/25/2012 |
| Zinc | | 10.0 | | 512 | 500 | 0 | 102.4 | 513.6 | 0.35 | 04/25/2012 |

STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)

| Batch 77498 | | SampType: MBLK | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|----------------|------|------------|-------|-------------|------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Lead | | 2.00 | | < 2.00 | 2.00 | 0 | 0 | -100 | 100 | 04/27/2012 |
| Lead | | 2.00 | | < 2.00 | 2.00 | 0 | 26.9 | -100 | 100 | 04/25/2012 |

| Batch 77498 | | SampType: LCS | | Units µg/L | | | | | | Date Analyzed |
|-------------|--|---------------|------|------------|-------|-------------|-------|-----------|------------|---------------|
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | |
| Lead | | 2.00 | | 14.5 | 15.0 | 0 | 96.4 | 85 | 115 | 04/27/2012 |
| Lead | | 2.00 | | 15.6 | 15.0 | 0 | 104.0 | 85 | 115 | 04/25/2012 |



Quality Control Results

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Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

STANDARD METHODS 18TH ED. 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)

| Batch 77498 | | SampType: MS | | Units µg/L | | | | | | | Date Analyzed |
|-------------------------|------|--------------|--------|------------|-------------|------|-----------|------------|--|--|---------------|
| SampID: 12041029-002DMS | | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | | Date Analyzed |
| Lead | 2.00 | | 22.6 | 15.0 | 8.3059 | 95.2 | 70 | 130 | | | 04/25/2012 |

| | | | | | | | | | | |
|--------------------------|--|---------------|------|------------|-------|-------------|------|--------------|------|---------------|
| Batch 77498 | | SampType: MSD | | Units µg/L | | | | RPD Limit 20 | | |
| SampID: 12041029-002DMSD | | | | | | | | | | |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
| Lead | | 2.00 | | 22.4 | 15.0 | 8.3059 | 94.1 | 22.5799 | 0.70 | 04/25/2012 |

STANDARD METHODS 18TH ED. 3030 E, 3113 B, METALS BY GFAA

| Batch 77502 | | SampType: MBLK | | Units µg/L | | | | | | | Date Analyzed |
|------------------|------|----------------|--------|------------|-------------|------|-----------|------------|--|--|---------------|
| SampID: MB-77502 | | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | | Date Analyzed |
| Lead | 2.00 | | < 2.00 | 2.00 | 0 | 0 | -100 | 100 | | | 04/27/2012 |

| Batch 77502 | | SampType: LCS | | Units µg/L | | | | | | | Date Analyzed |
|-------------------|------|---------------|--------|------------|-------------|-------|-----------|------------|--|--|---------------|
| SampID: LCS-77502 | | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | | Date Analyzed |
| Lead | 2.00 | | 15.4 | 15.0 | 0 | 102.4 | 85 | 115 | | | 04/27/2012 |

| Batch 77502 | | SampType: MS | | Units µg/L | | | | | | | Date Analyzed |
|-------------------------|------|--------------|--------|------------|-------------|-------|-----------|------------|--|--|---------------|
| SampID: 12041029-001CMS | | | | | | | | | | | |
| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | | | Date Analyzed |
| Lead | 4.00 | | 25.0 | 15.0 | 9.1956 | 105.5 | 70 | 130 | | | 04/27/2012 |

| | | | | | | | | | | | |
|--------------------------|--|---------------|------|------------|-------|-------------|-------|--------------|------|------------|------|
| Batch 77502 | | SampType: MSD | | Units µg/L | | | | RPD Limit 20 | | | |
| SampID: 12041029-001CMSD | | | | | | | | | | | Date |
| Analyses | | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Analyzed | |
| Lead | | 4.00 | | 24.3 | 15.0 | 9.1956 | 101.0 | 25.0172 | 2.72 | 04/27/2012 | |



Receiving Check List

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12041029

Client Project: Leadwood MTS-25/86-0013

Report Date: 01-May-12

Carrier: Heather Riley

Received By: SRH

Completed by:

On:

24-Apr-12

Timothy W. Mathis

Reviewed by:

On:

24-Apr-12

Michael L. Austin

Pages to follow: Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 5.2

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Reported field parameters measured:

Field ☐

Lab ☒

NA ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water - at least one vial per sample has zero headspace?

Yes ☐

No ☐

No VOA vials ☒

Water - TOX containers have zero headspace?

Yes ☐

No ☐

No TOX containers ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

Any No responses must be detailed below or on the COC.

Custody seal(s) intact on shipping container/cooler. TWM 4/24/12



Teklab Chain of Custody

Pg. 1 of 1

Workorder 12041029

5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618)344-1004 ~ Fax: (618)344-1005

Barr Engineering Co.

Are the samples chilled? ☒ Yes ☐ No with: ☒ Ice ☐ Blue icePreserved in ☒ Lab ☐ Field

TM 4.24.12

1001 Diamond Ridge, Suite 1100

Cooler Temp 5.2 Sampler Chris Schulte

Jefferson City

MO

65109

Leadwood MTS - 25/86-0013

Comments

Invoice to Mark Nations. Results to Allison Olds and Mark Nations, mnations@doerun.com

Matrix is surface water.

Metals = Cd, Pb, Zn

Custody seal intact upon courier p/c TM 4.24.12

Contact Allison Olds

eMail aolds@barr.com

Phone 573-638-5007

Requested Due Date Standard

Billing/PO Per contract with Doe Run

| Lab Use | Sample ID | Sample Date/Time | Preservative | Matrix | pH | T.S.S. | Sulfate | Settleable Solids | T.O.C. | Total Metals | Dissolved Metals | Hardness | | | | |
|---------|-----------|------------------|--------------|--------|---------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 001 | LW-001 | 4/23/12/9:45 | Unpres | 5 | Aqueous | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 002 | LW-002 | 9:15 | Unpres | 5 | Aqueous | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 003 | LW-Dup | 8:45 | Unpres | 5 | Aqueous | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 004 | LW-DS | 8:55 | Unpres | 5 | Aqueous | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 005 | LW-US | 8:35 | Unpres | 5 | Aqueous | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | Unpres | | Aqueous | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | Unpres | | Aqueous | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | Unpres | | Aqueous | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Teklab, Inc.
Courier Pick Up

| Relinquished By * | Date/Time | Received By | Date/Time |
|-------------------|---------------|-----------------|---------------|
| Chris / Barr | 4/23/12/14:45 | Hennifer Ry | 4/24/12/9:45 |
| Alathe - Bz | 4/24/12/11:00 | Stephane Haynes | 4/24/12/11:00 |

* The individual signing this agreement on behalf of client acknowledges that they have read and understand the terms of this agreement and that they have the authority to sign on behalf of client.